

**In the claims:**

Claim 1. (withdrawn) A method of preventing or treating an autoimmune disease, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 2. (withdrawn) The method of claim 1, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 3. (withdrawn) The method of claim 1, wherein said peptide is a synthetic peptide.

Claim 4. (withdrawn) The method of claim 1, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 5. (withdrawn) A method of preventing or treating a viral disease, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 6. (withdrawn) The method of claim 5, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 7. (withdrawn) The method of claim 5, wherein said peptide is a synthetic peptide.

Claim 8. (withdrawn) The method of claim 5, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 9. (withdrawn) A method of preventing viral infection, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 10. (withdrawn) The method of claim 9, wherein said peptide is a fragment

derived by fragmentation of  $\alpha$ S1 casein.

Claim 11. (withdrawn) The method of claim 9, wherein said peptide is a synthetic peptide.

Claim 12. (withdrawn) The method of claim 9, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 13. (original) A method of inducing hematopoiesis, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 14. (currently amended) The method of claim 13, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$ S1 casein.

Claim 15. (original) The method of claim 13, wherein said peptide is a synthetic peptide.

Claim 16. (original) The method of claim 13, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 17. (original) A method of inducing hematopoietic stem cells proliferation, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 18. (currently amended) The method of claim 17, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$ S1 casein.

Claim 19. (original) The method of claim 17, wherein said peptide is a synthetic peptide.

Claim 20. (original) The method of claim 17, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 21. (original) A method of inducing hematopoietic stem cells proliferation and differentiation, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 22. (currently amended) The method of claim 21, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$ S1 casein.

Claim 23. (original) The method of claim 21, wherein said peptide is a synthetic peptide.

Claim 24. (original) The method of claim 21, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 25. (original) A method of inducing megakaryocytopoiesis, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 26. (currently amended) The method of claim 25, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$ S1 casein.

Claim 27. (original) The method of claim 25, wherein said peptide is a synthetic peptide.

Claim 28. (original) The method of claim 25, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 29. (original) A method of inducing erythropoiesis, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 30. (currently amended) The method of claim 29, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$ S1 casein.

Claim 31. (original) The method of claim 29, wherein said peptide is a synthetic peptide.

Claim 32. (original) The method of claim 29, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 33. (original) A method of inducing leukocytopoiesis, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 34. (currently amended) The method of claim 33, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$ S1 casein.

Claim 35. (original) The method of claim 33, wherein said peptide is a synthetic peptide.

Claim 36. (original) The method of claim 33, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 37. (original) A method of inducing thrombocytopoiesis, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 38. (currently amended) The method of claim 37, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$ S1 casein.

Claim 39. (original) The method of claim 37, wherein said peptide is a synthetic peptide.

Claim 40. (original) The method of claim 37, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 41. (original) A method of inducing plasma cell proliferation, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 42. (currently amended) The method of claim 41, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$  S1 casein.

Claim 43. (original) The method of claim 41, wherein said peptide is a synthetic peptide.

Claim 44. (original) The method of claim 41, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 45. (original) A method of inducing dendritic cell proliferation, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 46. (currently amended) The method of claim 45, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$ S1 casein.

Claim 47. (original) The method of claim 45, wherein said peptide is a synthetic peptide.

Claim 48. (original) The method of claim 45, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 49. (original) A method of inducing macrophage proliferation, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 50. (currently amended) The method of claim 49, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$ S1 casein.

Claim 51. (original) The method of claim 49, wherein said peptide is a synthetic peptide.

Claim 52. (original) The method of claim 49, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 53. (currently amended) A method of ~~preventing or~~ treating thrombocytopenia, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 54. (currently amended) The method of claim 53, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$ S1 casein.

Claim 55. (original) The method of claim 53, wherein said peptide is a synthetic peptide.

Claim 56. (original) The method of claim 53, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 57. (currently amended) A method of ~~preventing or~~ treating pancytopenia, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 58. (currently amended) The method of claim 57, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$ S1 casein.

Claim 59. (original) The method of claim 57, wherein said peptide is a synthetic peptide.

Claim 60. (original) The method of claim 57, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 61. (currently amended) A method of ~~preventing or~~ treating granulocytopenia, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 62. (currently amended) The method of claim 61, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$ S1 casein.

Claim 63. (original) The method of claim 61, wherein said peptide is a synthetic peptide.

Claim 64. (original) The method of claim 61, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 65. (withdrawn) A method of preventing or treating hyperlipidemia, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 66. (withdrawn) The method of claim 65, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 67. (withdrawn) The method of claim 65, wherein said peptide is a synthetic peptide.

Claim 68. (withdrawn) The method of claim 65, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 69. (withdrawn) A method of preventing or treating cholesteremia, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 70. (withdrawn) The method of claim 69, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 71. (withdrawn) The method of claim 69, wherein said peptide is a synthetic peptide.

Claim 72. (withdrawn) The method of claim 69, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 73. (withdrawn) A method of preventing or treating glucosuria, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 74. (withdrawn) The method of claim 73, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 75. (withdrawn) The method of claim 73, wherein said peptide is a synthetic peptide.

Claim 76. (withdrawn) The method of claim 73, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 77. (withdrawn) A method of preventing or treating diabetes, the method



comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 78. (withdrawn) The method of claim 77, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 79. (withdrawn) The method of claim 77, wherein said peptide is a synthetic peptide.

Claim 80. (withdrawn) The method of claim 77, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 81. (withdrawn) A method of preventing or treating AIDS, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 82. (withdrawn) The method of claim 81, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 83. (withdrawn) The method of claim 81, wherein said peptide is a synthetic peptide.

Claim 84. (withdrawn) The method of claim 81, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 85. (withdrawn) A method of preventing or treating infection by HIV, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 86. (withdrawn) The method of claim 85, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 87. (withdrawn) The method of claim 85, wherein said peptide is a synthetic peptide.

Claim 88. (withdrawn) The method of claim 85, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 89. (withdrawn) A method of preventing or treating conditions associated with myeloablative doses of chemoradiotherapy supported by autologous bone marrow or peripheral blood stem cell transplantation (ASCT) or allogeneic bone marrow transplantation (BMT), the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 90. (withdrawn) The method of claim 89, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 91. (withdrawn) The method of claim 89, wherein said peptide is a synthetic peptide.

Claim 92. (withdrawn) The method of claim 89, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 93. (withdrawn) A method of treating a thrombopoietin treatable condition, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 94. (withdrawn) The method of claim 93, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 95. (withdrawn) The method of claim 93, wherein said peptide is a

synthetic peptide.

Claim 96. (withdrawn) The method of claim 93, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 97. (currently amended) A method of augmenting an hematopoietic effect of thrombopoietin, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from an N terminus portion of  $\alpha$ S1 casein.

Claim 98. (currently amended) The method of claim 97, wherein said peptide is a fragment derived by fragmentation of natural  $\alpha$  S1 casein.

Claim 99. (original) The method of claim 97, wherein said peptide is a synthetic peptide.

Claim 100. (original) The method of claim 1, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 101. (withdrawn) A method of enhancing peripheral stem cell mobilization, the method comprising administering to a subject in need thereof an effective amount of a pharmaceutical composition comprising effective amounts of thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$  S1 casein.

Claim 102. (withdrawn) The method of claim 101, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 103. (withdrawn) The method of claim 101, wherein said peptide is a synthetic peptide.

Claim 104. (withdrawn) The method of claim 101, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 105. (withdrawn) A pharmaceutical composition for preventing or treating an autoimmune disease, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 106. (withdrawn) The pharmaceutical composition of claim 105, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 107. (withdrawn) The pharmaceutical composition of claim 105, wherein said peptide is a synthetic peptide.

Claim 108. (withdrawn) The pharmaceutical composition of claim 105, wherein said peptide has a sequence as set forth in one of SEQ ID NOs:1-25.

Claim 109. (withdrawn) A pharmaceutical composition for preventing or treating a viral disease, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 110. (withdrawn) The pharmaceutical composition of claim 109, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 111. (withdrawn) The pharmaceutical composition of claim 109, wherein said peptide is a synthetic peptide.

Claim 112. (withdrawn) The pharmaceutical composition of claim 109, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 113. (withdrawn) A pharmaceutical composition for preventing viral

infection, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 114. (withdrawn) The pharmaceutical composition of claim 113, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 115. (withdrawn) The pharmaceutical composition of claim 113, wherein said peptide is a synthetic peptide.

Claim 116. (withdrawn) The pharmaceutical composition of claim 113, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 117. (withdrawn) A pharmaceutical composition for inducing hematopoiesis, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 118. (withdrawn) The pharmaceutical composition of claim 117, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 119. (withdrawn) The pharmaceutical composition of claim 117, wherein said peptide is a synthetic peptide.

Claim 120. (withdrawn) The pharmaceutical composition of claim 117, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 121. (withdrawn) A pharmaceutical composition for inducing hematopoietic stem cells proliferation, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 122. (withdrawn) The pharmaceutical composition of claim 121, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 123. (withdrawn) The pharmaceutical composition of claim 121, wherein said peptide is a synthetic peptide.

Claim 124. (withdrawn) The pharmaceutical composition of claim 121, wherein said peptide has a sequence as set forth in one of SEQ ID NOs:1-25.

Claim 125. (withdrawn) A pharmaceutical composition for inducing hematopoietic stem cells proliferation and differentiation, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 126. (withdrawn) The pharmaceutical composition of claim 125, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 127. (withdrawn) The pharmaceutical composition of claim 125, wherein said peptide is a synthetic peptide.

Claim 128. (withdrawn) The pharmaceutical composition of claim 125, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 129. (withdrawn) A pharmaceutical composition for inducing megakaryocytopoiesis, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 130. (withdrawn) The pharmaceutical composition of claim 129, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 131. (withdrawn) The pharmaceutical composition of claim 129, wherein said peptide is a synthetic peptide.

Claim 132. (withdrawn) The pharmaceutical composition of claim 129, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 133. (withdrawn) A pharmaceutical composition for inducing erythropoiesis, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 134. (withdrawn) The pharmaceutical composition of claim 133, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 135. (withdrawn) The pharmaceutical composition of claim 133, wherein said peptide is a synthetic peptide.

Claim 136. (withdrawn) The pharmaceutical composition of claim 133, wherein said peptide has a sequence as set forth in one of SEQ ID NOs:1-25.

Claim 137. (withdrawn) A pharmaceutical composition for inducing leukocytopoiesis, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 138. (withdrawn) The pharmaceutical composition of claim 137, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 139. (withdrawn) The pharmaceutical composition of claim 137, wherein said peptide is a synthetic peptide.

Claim 140. (withdrawn) The pharmaceutical composition of claim 137, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 141. (withdrawn) A pharmaceutical composition for inducing thrombocytopoiesis, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 142. (withdrawn) The pharmaceutical composition of claim 141, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 143. (withdrawn) The pharmaceutical composition of claim 141, wherein said peptide is a synthetic peptide.

Claim 144. (withdrawn) The pharmaceutical composition of claim 141, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.



Claim 145. (withdrawn) A pharmaceutical composition for inducing plasma cell proliferation, the pharmaceutical composition comprising, as an active ingredient a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 146. (withdrawn) The pharmaceutical composition of claim 145, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 147. (withdrawn) The pharmaceutical composition of claim 145, wherein said peptide is a synthetic peptide.

Claim 148. (withdrawn) The pharmaceutical composition of claim 1, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 149. (withdrawn) A pharmaceutical composition for inducing dendritic cell proliferation, the pharmaceutical composition comprising, as an active ingredient a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 150. (withdrawn) The pharmaceutical composition of claim 149, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 151. (withdrawn) The pharmaceutical composition of claim 149, wherein said peptide is a synthetic peptide.

Claim 152. (withdrawn) The pharmaceutical composition of claim 149, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 153. (withdrawn) A pharmaceutical composition for inducing macrophage proliferation, the pharmaceutical composition comprising a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 154. (withdrawn) The pharmaceutical composition of claim 153, wherein

said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 155. (withdrawn) The pharmaceutical composition of claim 153, wherein said peptide is a synthetic peptide.

Claim 156. (withdrawn) The pharmaceutical composition of claim 153, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 157. (withdrawn) A pharmaceutical composition for preventing or treating thrombocytopenia, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 158. (withdrawn) The pharmaceutical composition of claim 157, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 159. (withdrawn) The pharmaceutical composition of claim 157, wherein said peptide is a synthetic peptide.

Claim 160. (withdrawn) The pharmaceutical composition of claim 157, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 161. (withdrawn) A pharmaceutical composition for preventing or treating pancytopenia, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 162. (withdrawn) The pharmaceutical composition of claim 161, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 163. (withdrawn) The pharmaceutical composition of claim 161, wherein said peptide is a synthetic peptide.

Claim 164. (withdrawn) The pharmaceutical composition of claim 161, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 165. (withdrawn) A pharmaceutical composition for preventing or treating granulocytopenia, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 166. (withdrawn) The pharmaceutical composition of claim 165, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 167. (withdrawn) The pharmaceutical composition of claim 165, wherein said peptide is a synthetic peptide.

Claim 168. (withdrawn) The pharmaceutical composition of claim 165, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 169. (withdrawn) A pharmaceutical composition for preventing or treating hyperlipidemia, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 170. (withdrawn) The pharmaceutical composition of claim 169, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 171. (withdrawn) The pharmaceutical composition of claim 169, wherein said peptide is a synthetic peptide.

Claim 172. (withdrawn) The pharmaceutical composition of claim 169, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 173. (withdrawn) A pharmaceutical composition for preventing or treating cholesteremia, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 174. (withdrawn) The pharmaceutical composition of claim 173, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 175. (withdrawn) The pharmaceutical composition of claim 173, wherein said peptide is a synthetic peptide.

Claim 176. (withdrawn) The pharmaceutical composition of claim 173, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 177. (withdrawn) A pharmaceutical composition for preventing or treating glucosuria, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 178. (withdrawn) The pharmaceutical composition of claim 177, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 179. (withdrawn) The pharmaceutical composition of claim 177, wherein said peptide is a synthetic peptide.

Claim 180. (withdrawn) The pharmaceutical composition of claim 177, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 181. (withdrawn) A pharmaceutical composition for preventing or treating diabetes, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 182. (withdrawn) The pharmaceutical composition of claim 181, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 183. (withdrawn) The pharmaceutical composition of claim 181, wherein said peptide is a synthetic peptide.

Claim 184. (withdrawn) The pharmaceutical composition of claim 181, wherein said peptide has a sequence as set forth in one of SEQ ID NOs:1-25.

Claim 185. (withdrawn) A pharmaceutical composition for preventing or treating AIDS, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 186. (withdrawn) The pharmaceutical composition of claim 185, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 187. (withdrawn) The pharmaceutical composition of claim 185, wherein said peptide is a synthetic peptide.

Claim 188. (withdrawn) The pharmaceutical composition of claim 185, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 189. (withdrawn) A pharmaceutical composition for preventing or treating infection by HIV, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 190. (withdrawn) The pharmaceutical composition of claim 189, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 191. (withdrawn) The pharmaceutical composition of claim 189, wherein said peptide is a synthetic peptide.

Claim 192. (withdrawn) The pharmaceutical composition of claim 189, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 193. (withdrawn) A pharmaceutical composition for preventing or treating conditions associated with myeloablative doses of chemoradiotherapy supported by autologous bone marrow or peripheral blood stem cell transplantation (ASCT) or allogeneic bone marrow transplantation (BMT), the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 194. (withdrawn) The pharmaceutical composition of claim 193, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 195. (withdrawn) The pharmaceutical composition of claim 193, wherein said peptide is a synthetic peptide.

Claim 196. (withdrawn) The pharmaceutical composition of claim 193, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 197. (withdrawn) A pharmaceutical composition for treating a thrombopoietin treatable condition, the pharmaceutical composition comprising, as an active ingredient a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 198. (withdrawn) The pharmaceutical composition of claim 197, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 199. (withdrawn) The pharmaceutical composition of claim 197, wherein said peptide is a synthetic peptide.

Claim 200. (withdrawn) The pharmaceutical composition of claim 197, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 201. (withdrawn) A pharmaceutical composition for augmenting the effect of thrombopoietin, the pharmaceutical composition comprising, as an active ingredient a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 202. (withdrawn) The pharmaceutical composition of claim 201, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 203. (withdrawn) The pharmaceutical composition of claim 201, wherein said peptide is a synthetic peptide.

Claim 204. (withdrawn) The pharmaceutical composition of claim 201, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 205. (withdrawn) A pharmaceutical composition for enhancing peripheral stem cell mobilization, the pharmaceutical composition comprising, as active ingredients thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$  S1 casein and a pharmaceutically acceptable carrier.

Claim 206. (withdrawn) The pharmaceutical composition of claim 205, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 207. (withdrawn) The pharmaceutical composition of claim 205, wherein said peptide is a synthetic peptide.

Claim 208. (withdrawn) The pharmaceutical composition of claim 205, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 209. (withdrawn) A pharmaceutical composition for inducing hematopoiesis, the pharmaceutical composition comprising, as active ingredients, thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 210. (withdrawn) The pharmaceutical composition of claim 209, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 211. (withdrawn) The pharmaceutical composition of claim 209, wherein said peptide is a synthetic peptide.

Claim 212. (withdrawn) The pharmaceutical composition of claim 209, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.



Claim 213. (withdrawn) A pharmaceutical composition for inducing hematopoietic stem cells proliferation, the pharmaceutical composition comprising, as active ingredients, thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$  S1 casein and a pharmaceutically acceptable carrier.

Claim 214. (withdrawn) The pharmaceutical composition of claim 213, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 215. (withdrawn) The pharmaceutical composition of claim 213, wherein said peptide is a synthetic peptide.

Claim 216. (withdrawn) The pharmaceutical composition of claim 213, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 217. (withdrawn) A pharmaceutical composition for inducing hematopoietic stem cells proliferation and differentiation, the pharmaceutical composition comprising, as active ingredients, thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 218. (withdrawn) The pharmaceutical composition of claim 217, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 219. (withdrawn) The pharmaceutical composition of claim 217, wherein said peptide is a synthetic peptide.

Claim 220. (withdrawn) The pharmaceutical composition of claim 217, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 221. (withdrawn) A pharmaceutical composition for inducing megakaryocytopoiesis, the pharmaceutical composition comprising, as active ingredients, thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 222. (withdrawn) The pharmaceutical composition of claim 221, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 223. (withdrawn) The pharmaceutical composition of claim 221, wherein said peptide is a synthetic peptide.

Claim 224. (withdrawn) The pharmaceutical composition of claim 221, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 225. (withdrawn) A pharmaceutical composition for inducing erythropoiesis, the pharmaceutical composition comprising, as active ingredients, thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 226. (withdrawn) The pharmaceutical composition of claim 225, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 227. (withdrawn) The pharmaceutical composition of claim 225, wherein said peptide is a synthetic peptide.

Claim 228. (withdrawn) The pharmaceutical composition of claim 225, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 229. (withdrawn) A pharmaceutical composition for inducing leukocytopoiesis, the pharmaceutical composition comprising, as active ingredients, thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 230. (withdrawn) The pharmaceutical composition of claim 229, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 231. (withdrawn) The pharmaceutical composition of claim 229, wherein said peptide is a synthetic peptide.

Claim 232. (withdrawn) The pharmaceutical composition of claim 229, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 233. (withdrawn) A pharmaceutical composition for inducing thrombocytopoiesis, the pharmaceutical composition comprising, as active ingredients, thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 234. (withdrawn) The pharmaceutical composition of claim 233, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 235. (withdrawn) The pharmaceutical composition of claim 233, wherein said peptide is a synthetic peptide.

Claim 236. (withdrawn) The pharmaceutical composition of claim 233, wherein said peptide has a sequence as set forth in one of SEQ ID NOs:1-25.

Claim 237. (withdrawn) A pharmaceutical composition for preventing or treating thrombocytopenia, the pharmaceutical composition comprising, as active ingredients, thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 238. (withdrawn) The pharmaceutical composition of claim 237, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 239. (withdrawn) The pharmaceutical composition of claim 237, wherein said peptide is a synthetic peptide.

Claim 240. (withdrawn) The pharmaceutical composition of claim 237, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 241. (withdrawn) A pharmaceutical composition for preventing or treating pancytopenia, the pharmaceutical composition comprising, as active ingredients, thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 242. (withdrawn) The pharmaceutical composition of claim 241, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 243. (withdrawn) The pharmaceutical composition of claim 241, wherein said peptide is a synthetic peptide.

Claim 244. (withdrawn) The pharmaceutical composition of claim 241, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 245. (withdrawn) A pharmaceutical composition for preventing or treating granulocytopenia, the pharmaceutical composition comprising, as active ingredients, thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 246. (withdrawn) The pharmaceutical composition of claim 245, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 247. (withdrawn) The pharmaceutical composition of claim 245, wherein said peptide is a synthetic peptide.

Claim 248. (withdrawn) The pharmaceutical composition of claim 245, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 249. (withdrawn) A pharmaceutical composition for treating or preventing an indication selected from the group consisting of autoimmune disease or condition, viral disease, viral infection, hematological disease, hematological deficiencies, thrombocytopenia, pancytopenia, granulocytopenia, hyperlipidemia, hypercholesterolemia, glucosuria, hyperglycemia, diabetes, AIDS, HIV-1, helper T-cell disorders, dendrite cell deficiencies, macrophage deficiencies, hematopoietic stem cell disorders including platelet, lymphocyte, plasma cell and neutrophil disorders, pre-leukemic conditions, leukemic conditions, immune system disorders resulting from chemotherapy or radiation therapy, human immune system disorders resulting from treatment of diseases of immune deficiency and bacterial infections, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 250. (withdrawn) The pharmaceutical composition of claim 249, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 251. (withdrawn) The pharmaceutical composition of claim 249, wherein said peptide is a synthetic peptide.

Claim 252. (withdrawn) The pharmaceutical composition of claim 249, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 253. (withdrawn) A pharmaceutical composition for treating or preventing an indication selected from the group consisting of hematological disease, hematological deficiencies, thrombocytopenia, pancytopenia, granulocytopenia, dendrite cell deficiencies, macrophage deficiencies, hematopoietic stem cell disorders including platelet, lymphocyte, plasma cell and neutrophil disorders, pre-leukemic conditions, leukemic conditions, myelodysplastic syndrome, aplastic anemia and bone marrow insufficiency, the pharmaceutical composition comprising, as active ingredients, thrombopoietin and a peptide derived from an N terminus portion of  $\alpha$ S1 casein and a pharmaceutically acceptable carrier.

Claim 254. (withdrawn) The pharmaceutical composition of claim 253, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 255. (withdrawn) The pharmaceutical composition of claim 253, wherein said peptide is a synthetic peptide.

Claim 256. (withdrawn) The pharmaceutical composition of claim 253, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 257. (withdrawn) A purified peptide having an amino acid sequence selected from the group consisting of SEQ ID NOs: 1-25.

Claim 258. (withdrawn) A pharmaceutical composition comprising a purified peptide having an amino acid sequence selected from the group consisting of SEQ ID NOs: 1-25 and a pharmaceutically acceptable carrier.

Claim 259. (withdrawn) A pharmaceutical composition comprising

thrombopoietin and a purified peptide having an amino acid sequence selected from the group consisting of SEQ ID NOs: 1-25 and a pharmaceutically acceptable carrier.

Claim 260. (withdrawn) A method of enhancing colonization of donated blood stem cells in a myeloablated recipient, the method comprising treating a donor of said donated blood stem cells with a peptide derived from an N terminus portion of  $\alpha$ S1 casein prior to donation and implanting the donated blood stem cells in the recipient.

Claim 261. (withdrawn) The method of claim 260, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 262. (withdrawn) The method of claim 260, wherein said peptide is a synthetic peptide.

Claim 263. (withdrawn) The method of claim 260, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 264. (withdrawn) A method of enhancing colonization of donated blood stem cells in a myeloablated recipient, the method comprising treating said donated blood stem cells with a peptide derived from an N terminus portion of  $\alpha$ S1 casein prior to implanting the donated blood stem cells in the recipient.

Claim 265. (withdrawn) The method of claim 264, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 266. (withdrawn) The method of claim 264, wherein said peptide is a synthetic peptide.

Claim 267. (withdrawn) The method of claim 264, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 268. (withdrawn) A method of enhancing colonization of blood stem cells in a myeloablated recipient, the method comprising treating said blood stem cells with a

peptide derived from an N terminus portion of  $\alpha$ S1 casein prior to implanting the blood stem cells in the recipient.

Claim 269. (withdrawn) The method of claim 268, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 270. (withdrawn) The method of claim 268, wherein said peptide is a synthetic peptide.

Claim 271. (withdrawn) The method of claim 268, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 272. (withdrawn) A method of enhancing colonization of donated blood stem cells in a myeloablated recipient, the method comprising treating a donor of said donated blood stem cells with a peptide derived from an N terminus portion of  $\alpha$ S1 casein and thrombopoietin prior to donation and implanting the donated blood stem cells in the recipient.

Claim 273. (withdrawn) The method of claim 272, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 274. (withdrawn) The method of claim 272, wherein said peptide is a synthetic peptide.

Claim 275. (withdrawn) The method of claim 272, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.



Claim 276. (withdrawn) A method of enhancing colonization of donated blood stem cells in a myeloablated recipient, the method comprising treating said donated blood stem cells with a peptide derived from an N terminus portion of  $\alpha$ S1 casein and thrombopoietin prior to implanting the donated blood stem cells in the recipient.

Claim 277. (withdrawn) The method of claim 276, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 278. (withdrawn) The method of claim 276, wherein said peptide is a synthetic peptide.

Claim 279. (withdrawn) The method of claim 276, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 280. (withdrawn) A method of enhancing colonization of blood stem cells in a myeloablated recipient, the method comprising treating said blood stem cells with a peptide derived from an N terminus portion of  $\alpha$ S1 casein and thrombopoietin prior to implanting the blood stem cells in the recipient.

Claim 281. (withdrawn) The method of claim 280, wherein said peptide is a fragment derived by fragmentation of  $\alpha$ S1 casein.

Claim 282. (withdrawn) The method of claim 280, wherein said peptide is a synthetic peptide.

Claim 283. (withdrawn) The method of claim 280, wherein said peptide has a sequence as set forth in one of SEQ ID NOs: 1-25.

Claim 284. (new) The method of claim 13, wherein said wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 285. (new) The method of claim 17, wherein said wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 286. (new) The method of claim 21, wherein said wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 287. (new) The method of claim 25, wherein said wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 288. (new) The method of claim 29, wherein said wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 289. (new) The method of claim 33, wherein said wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 290. (new) The method of claim 37, wherein said wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 291. (new) The method of claim 41, wherein said wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 292. (new) The method of claim 45, wherein said wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 293. (new) The method of claim 49, wherein said wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 294. (new) The method of claim 53, wherein said wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 295. (new) The method of claim 57, wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 296. (new) The method of claim 61, wherein said peptide has a sequence as set forth in SEQ ID NO: 4.

Claim 297. (new) The method of claim 97, wherein said peptide has a sequence as set forth in SEQ ID NO: 4.